



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
[www.uspto.gov](http://www.uspto.gov)

B

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/781,911	02/20/2004	Seigo Nishikawa	Q79997	5337
23373	7590	02/01/2006	EXAMINER	
SUGHRUE MION, PLLC 2100 PENNSYLVANIA AVENUE, N.W. SUITE 800 WASHINGTON, DC 20037				SHAW, CLIFFORD C
ART UNIT		PAPER NUMBER		
				1725

DATE MAILED: 02/01/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	<b>Application No.</b>	<b>Applicant(s)</b>	
	10/781,911	NISHIKAWA ET AL.	
	<b>Examiner</b>	<b>Art Unit</b>	
	Clifford C. Shaw	1725	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

#### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) Responsive to communication(s) filed on 21 November 2005.  
 2a) This action is **FINAL**.      2b) This action is non-final.  
 3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) Claim(s) 1-3 is/are pending in the application.  
 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.  
 5) Claim(s) \_\_\_\_\_ is/are allowed.  
 6) Claim(s) 1-3 is/are rejected.  
 7) Claim(s) \_\_\_\_\_ is/are objected to.  
 8) Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) The specification is objected to by the Examiner.  
 10) The drawing(s) filed on 21 June 2004 is/are: a) accepted or b) objected to by the Examiner.  
     Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
     Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).  
 11) The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
 a) All    b) Some \* c) None of:  
 1. Certified copies of the priority documents have been received.  
 2. Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.  
 3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

- |   |   |
|---|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)  | 4) <input type="checkbox"/> Interview Summary (PTO-413)                     |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                    | Paper No(s)/Mail Date. _____ .  |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date _____. | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
|   | 6) <input type="checkbox"/> Other: _____ .                                  |

**Detailed Action**

- 1.) The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.
- 2.) Claims 1-3 are rejected under 35 U.S.C. 103(a) as being unpatentable over Terayama et al. (5,645,741) taken with Stava (5,148,001). Figure 3 and the discussion at column 8, line 37 through column 9, line 20 in Terayama et al. (5,645,741) disclose an arc welder with features claimed, including: a rectifier circuit DR1; an inverter circuit TR1; transformer T1; a second rectifier circuit DR2; a first reactor LD1; a current circuit comprised of a third rectifier circuit DR4; a reactance LD2 connecting the current circuit in parallel with the second rectifier circuit. The claims differ from Terayama et al. (5,645,741) in specifying that the reactance associated with the current circuit has a larger reactance than the claimed first reactor and further in specifying particular inductance values in claim 2 for these reactors. This difference does not patentably distinguish over the prior art. Although the patent to Terayama et al. (5,645,741) does not explicitly discuss the values of the two reactors LD2 and LD1 (it does hint that LD2 is greater than LD1 by schematically showing more windings for LD2 than LD1 in the circuit diagram), it is considered obvious that the reactor LD2 has a larger inductance than LD1 on the basis of the functions they perform. The inductance LD2 is intended to maintain the arc during interruptions, much as applicant's current circuit reactor does, while the inductance LD1 is in the main current branch of a constant voltage system (see the graph in figure 2). Since a relatively high inductance is useful for maintaining an arc and a high inductance would not be useful in a

constant voltage system, it is considered obvious that the inductance LD2 is greater than the inductance of LD1. Further support for this position is found in Stava (5,148,001). The patent to Stava (5,148,001) discusses two parallel supplies, one a main welding supply, the other a background current supply, broadly similar to the situation of the Terayama et al. (5,645,741) system. The supplies in Stava (5,148,001) use two inductances as does the figure 3 system of Terayama et al. (5,645,741). At column 5, lines 30-35, the patent to Stava (5,148,001) discusses the relationship of the inductances, and teaches that the main welding circuit should have a lower inductance than the background circuit. It would have been obvious to have configured the inductances in Terayama et al. (5,645,741) in the manner taught by Stava (5,148,001) to secure the advantages of this arrangement, thereby satisfying the limitation in claim 1. In regard to the particular inductance values of claim 2, the same are considered representative of routine engineering choices. It would have been obvious to have chosen these values for the system of Terayama et al. (5,645,741), depending on the specifics of a particular welding job, thereby satisfying the claim. In regard to the claim language specifying that the voltage applied to the current circuit is higher than the voltage applied to the second rectifier circuit and specifying that the output voltage of the second rectifier circuit is higher than the current circuit output, the same does not patentably distinguish over Terayama et al. (5,645,741). Figure 2 in Terayama et al. (5,645,741) clearly shows that the open circuit output voltage of the auxiliary power source (i.e., the power source associated with element DR4) is higher than the open circuit voltage of the main power source (i.e., the source associated with DR2). The only way for this to happen is if the secondary voltage from T1 into DR4 is higher than the voltage into DR2, satisfying the claim language.

3.) Applicant's arguments filed 11/21/2005 have been fully considered but they are not persuasive. Applicant argues that his claims distinguish over Terayama et al. (5,645,741) because of the language directed to the different voltages applied to the current circuit and to the second rectifier circuit. This argument is not persuasive. In the voltage/current graphs in figure 3, Terayama et al. (5,645,741) clearly shows that his auxiliary power supply has a larger open circuit voltage than the main power supply. Since both the auxiliary and main power supplies are connected to the same transformer primary, the only way to achieve this difference in voltages is by providing different secondary windings for T1, with a higher voltage being provided to the auxiliary source to achieve the disclosed higher output voltage.

4.) Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event,

however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication should be directed to Clifford C Shaw at telephone number 571-272-1182. The examiner can normally be reached on Monday through Friday of the first week of the pay period and on Tuesday through Friday of the second week of the pay period.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Mr. Thomas G. Dunn, can be reached at 571-272-1171. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Clifford C Shaw  
Primary Examiner  
Art Unit 1725

January 31, 2006